California Regional Water Quality Control Board
North Coast Region

Cleanup and Abatement Order and Requirement for Technical Reports
No. R1-2004-0028

for

Scotia Pacific Company LLC, Salmon Creek Corporation, and
The Pacific Lumber Company

South Fork Elk River and Mainstem Elk River Watersheds

Humboldt County

The California Regional Water Quality Control Board, North Coast Region (hereinafter Regional Water Board), finds that:

1. Scotia Pacific Company LLC (Scopac), Salmon Creek Corporation (SCC), and the Pacific Lumber Company (PALCO) are subsidiaries of MAXXAM, Inc. and they collectively comprise one of the primary timberland owners in the South Fork and Mainstem Elk River watersheds. Scopac, SCC, and PALCO are hereinafter collectively referred to as the "Discharger."

2. The entire Elk River watershed is located in Humboldt County, and is comprised of six planning watersheds (CalWater V2.2) occupying approximately 37,300 acres, of which the Discharger owns approximately 22,200 acres. For purposes of this order, the term "North Fork Elk River watershed" refers to the area comprised of the Upper and Lower North Fork Elk River Planning watersheds. The term "South Fork Elk River watershed" refers to the area comprised of the Upper and Lower South Fork Elk River watersheds. The term "Mainstem Elk River watershed" refers to the area comprised of the Lower Elk River planning watershed. Figure 1 (attached) shows the approximate area of the Discharger's land ownership in the South Fork and Mainstem Elk River watersheds, which drain into South Humboldt Bay. The names of the six planning watersheds, their approximate drainage areas, and the Discharger's ownership in each area are listed in the table below.

Planning Watersheds	**Drainage Area** (acres)	**Discharger's Ownership** (acres)
Upper South Fork Elk River*	7,492	3,654 (49%)
Lower South Fork Elk River*	5,692	3,296 (58%)
Upper North Fork Elk River	5,358	5,358 (100%)
Lower North Fork Elk River	9,077	8,757 (96%)
Lower Elk River*	6,224	1,135 (18%)
Martin Slough	3,426	0 (0%)

* Featured on Figure 1.

3. The Mediterranean climate in the vicinity of the South Fork and Mainstem Elk River watersheds is characterized by mild, wet winters and prolonged summer dry seasons. Mean surface air temperature ranges from 9^{o} C in January to 13^{o} C in June, with summer

temperatures moderated by fog associated with coastal upwelling. Mean annual precipitation shows a strong elevation gradient, ranging from 99 cm in Eureka (seaside) to 152 cm near Kneeland (20 km inland, elevation 810 m.). Roughly 90% of the precipitation occurs as rainfall between October and April.

4. The Discharger conducts timber harvesting, forestry management, road construction and maintenance, and related activities on its lands in the South Fork and Mainstem Elk River watersheds, and similarly in the North Fork Elk River watershed. The physical setting, climate, and land use history of the North Fork and South Fork Elk River watersheds are very similar and, based on available data, impacts to waters of the State in these watersheds are similar in nature and scope as well. PALCO is the Licensed Timber Operator for most Timber Harvesting Plans (THPs) submitted by Scopac in the entire Elk River watershed.

5. The beneficial uses for waters of the State in the entire Elk River watershed include:
   (a) municipal and domestic supply
   (b) agricultural supply
   (c) industrial service supply
   (d) groundwater recharge
   (e) water contact recreation
   (f) non-contact recreation
   (g) commercial and sport fishing
   (h) cold freshwater habitat
   (i) wildlife habitat
   (j) rare, threatened and endangered species
   (k) migration of aquatic organisms
   (l) spawning, reproduction and/or early development
   (m) estuarine habitat
   (n) navigation

6. The waters of South Fork and Mainstem Elk River support coho and chinook salmon, steelhead and cutthroat trout. Coho salmon, chinook salmon, and steelhead trout are listed as threatened under the Federal Endangered Species Act. Additionally, the California Fish and Game Commission plans to amend the California Endangered Species Act (CESA) to list coho salmon as threatened in the Southern Oregon / Northern California Coast Evolutionarily Significant Unit (ESU) north of San Francisco Bay, which includes Elk River. However, according to California Department of Fish and Game (DFG) Conservation Planning, coho are still a candidate species under CESA until such an amendment is adopted.

7. The waters of South Fork and Mainstem Elk River support domestic and agricultural water supplies for more than 100 residents. Elk River residents have complained to the Regional Water Board about sediment aggradation in stream channels and floodplains, adverse impacts to domestic and agricultural water supplies, and increased flood frequency and magnitude.

8. Public access to the Headwaters Forest property in the Lower and Upper South Fork Elk River planning watersheds allows visitors to enjoy water contact recreation and non-contact water recreation in the South Fork Elk River. The Headwaters Forest Reserve, totaling 7,500 acres, was acquired through Congressional and State appropriations totaling $380 million in 1999 by the Bureau of Land Management (BLM) and the State of California. Under the joint

purchase, BLM acquired fee title and the State of California acquired a conservation easement over the entire property. The lands are managed by BLM, as the lead federal agency, in cooperation with the DFG, as the lead agency for the State of California. The Congressional legislation that led to the acquisition of the Reserve provided specific guidance for management, primarily to "conserve and study the land, fish, wildlife and forests...while providing public recreation opportunities and other management needs." The Deed of Conservation Easement for the State interests conveys to the State an oversight responsibility to ensure that, "All human activities within the Headwaters Forest shall be consistent with the stated goals and purposes of (the Act)," and a Memorandum of Understanding (MOU) signed by the BLM and DFG in 1999 directs both agencies to plan and manage the Reserve for its "fish and wildlife habitat and other ecological values as full cooperating partners."

9. North Fork Elk River historically supported domestic and agricultural water supplies for local residents. However, discharges resulting from intensive land management activities by the Discharger led to significant impacts to these beneficial uses in North Fork Elk River and subsequently led to the Regional Water Board issuing Cleanup and Abatement Order No. 98-100. In response to that order, a stipulated agreement was reached between the Discharger and the Regional Water Board, wherein, in partial compliance with that order, the Discharger provided replacement domestic and agriculture supplies to affected residents in the North Fork Elk River watershed. Order No. 98-100 did not require affected supplies to be replaced along South Fork or Mainstem Elk River.

10. The entire Elk River watershed is listed as an impaired water body under Section 303(d) of the Clean Water Act due to sedimentation/siltation. Water quality problems cited under the listing include: sedimentation, threat of sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, and property damage. The entire Elk River watershed is also one of five watersheds (the other four being Bear, Jordan, Stitz, and Freshwater Creek watersheds) deemed in 1997 by the California Department of Forestry and Fire Protection (CDF), DFG, California Division of Mines and Geology (now California Geologic Survey [CGS]) and the Regional Water Board as exhibiting varying degrees of significant adverse cumulative impacts, with timber harvesting a contributing factor. For purposes of this order, these watersheds will be referred to as the five impaired watersheds.

11. The increased flood frequencies and magnitudes observed in Elk River and its tributaries are, in part, the result of intense past and ongoing forestry-related land management activities on sensitive soils and unstable geologic terrain in the watershed. As a result of these activities, significant discharges of sediment and organic debris to watercourses have aggraded the stream channels and, along with increased peak flows, have contributed to increased flood frequencies and magnitudes in Elk River. Flooding is considered a nuisance condition under California Water Code (CWC) section 13304. Deleterious effects to fisheries and agricultural and domestic water users can also occur in the form of lost and damaged water supplies, degradation of fish spawning and rearing habitats, property damage, access and regress restrictions, and overall reduction in public safety, health, and welfare.

12. On December 3, 2003, the Regional Water Board approved three motions that have bearing on this order. One motion concluded that additional regulatory and non-regulatory actions

are necessary due to the rate and scale of land disturbing activities in the five impaired watersheds, including Elk River. Another motion directed the development of this order and further directed the Regional Water Board Executive Officer to issue a Time Schedule Order if the due dates contained in this order are not met. The third motion directed staff to develop and implement mitigation measures as necessary to address cumulative impacts in individual THPs, until watershed-specific Waste Discharge Requirements are in place.

13. In March 1999, the Discharger's Habitat Conservation Plan (HCP) was finalized. The HCP agreement was entered into by the Discharger, the US Fish and Wildlife Service, National Marine Fisheries Service, the California Department of Fish & Game, and CDF. The Regional Water Board is not signatory to the HCP, which has a fifty-year lifespan. This long-term plan is intended to ensure the continued health of the biological communities on the discharger's covered lands and to minimize and mitigate impacts from the Discharger's land management activities on individual species. The HCP is not designed to assure compliance with the Porter-Cologne Water Quality Control Act or the Water Quality Control Plan for the North Coast Region.

14. On March 26, 2003, the Regional Water Board Executive Officer issued two orders under CWC section 13267(b) directing the Discharger to submit technical reports for purposes of developing Elk River and Freshwater Creek Total Maximum Daily Loads (TMDLs) for sediment. The technical reports under both orders were due by April 15, 2003. The Discharger has not to date complied with those orders.

15. On June 21, 2002, the Executive Officer issued an order under CWC section 13267(b) directing the Discharger to submit a technical report to identify early abatement actions for the North Fork Elk River watershed which could be implemented prior to completion of the TMDL underway for sediment. The technical report was to consider early abatement actions which, alone or in combination could involve: limitations on threatened discharges associated with implementation of new THPs; limitations on existing or threatened discharges associated with road maintenance and repairs; stabilization of existing or threatened discharges associated with unstable slopes and/or landslides; or other appropriate soil discharge prevention and/or cleanup actions. The technical report was due on July 22, 2002, and was to include a schedule of implementation for the identified activities, including measures that would be taken during the summer of 2002 prior to the winter period. The Discharger submitted a response which, while timely, included only a summary of mitigation measures contained in the Habitat Conservation Plan (HCP) and a list of THPs for which sediment controls would be applied. The submittal did not contain a time schedule beyond that describing when THPs would be implemented. As a result of incomplete submittals, Cleanup and Abatement Order No. R1-2002-0085 was issued to the Discharger under CWC section 13304. That order was superseded by Cleanup and Abatement Order No. R1-2002-0117.

16. The Discharger has commenced a watershed analysis (WA), as required by the HCP, for planning watersheds comprising the Elk River and Salmon Creek drainage areas. A draft version of this WA was provided to Regional Water Board staff in October 2003. Summary data from this draft analysis, which are consistent with previously available data and conclusions, indicate that: 1) the western portion of the WA area is underlain by geologic bedrock and overlying soils that are highly susceptible to erosion and that have a relatively

high potentials for contributing to suspended sediment loads in watercourses, 2) high rates of shallow landslides are associated with soils overlying the western portion of the WA area, 3) the landscape has been dominated by forestry activities for more than 100 years, 4) extensive road-building has occurred within the WA area with road densities up to 10 miles per square mile of land, 5) agricultural lands are located primarily adjacent to Elk River, and 6) flood events appear higher and produced greater watershed response in the latter half of the 20th century.

17. Under the HCP, the Discharger is implementing road-related sediment reduction strategies associated with CDF-approved THPs to reduce sediment discharges from roads to streams. Particularly, the Discharger "upgrades" all appurtenant roads associated with approved THPs, and employs a "zero net discharge" sediment offset strategy. Such efforts can be effective at minimizing sediment discharges from timber harvest activities when properly implemented. However, these strategies fail to first prevent controllable discharges from occurring and then fail to truly mitigate for incidental discharges once they have occurred, thus continuing to allow ongoing sediment discharges to waters of the State. While these ongoing discharges may be acceptable within the time period of the HCP, they do not comply with prohibitions outlined in the Action Plan for Logging, Construction, and Associated Activities in the Water Quality Control Plan for the North Coast Region (Basin Plan). Therefore, sediment reduction strategies under the HCP, as implemented through the CDF THP review process, do not sufficiently protect water quality and restore the beneficial uses of impaired waters of the State.

18. Under the HCP, the Discharger is also conducting corrective roadwork, independent of THPs, across its ownership to reduce sediment discharges from roads to streams. Particularly, the Discharger is required to "stormproof" roads and landings on its ownership within the first 20 years of the HCP. Such efforts can be effective at minimizing road-related sediment discharges when properly implemented. However, sediment discharges from other anthropogenic sediment source sites, such as skid trails, gullies, and landslides are not addressed under this strategy. Furthermore, while the rate of corrective roadwork across the Discharger's ownership, which is subject to change under the HCP, may be acceptable within the time period of the HCP, it does not ensure that Basin Plan water quality objectives are achieved, especially in impaired watersheds such as South Fork and Mainstem Elk Rivers. Therefore, corrective roadwork conducted under the HCP, independent of THPs, does not sufficiently protect water quality, and restore the beneficial uses of impaired waters of the State.

19. Regional Water Board staff have conducted fieldwork and made observations in the South Fork and Mainstem Elk River watersheds. Staff inspections in January 2003 revealed freshly deposited silts and sands from a few inches to a foot thick along South Fork and Mainstem Elk Rivers and their floodplains. Aerial photo interpretation by the Discharger's consultant shows a 33-fold increase in non-road related debris landslides and debris torrents in Clapp Gulch in 1997, and a near-four fold increase in Railroad Gulch, compared to the previous decade (*Road –Related and Non Road-Related Erosion and Sediment Delivery to Clapp Gulch, Railroad Gulch, South Fork Elk River and Lower Mainstem Elk River*, Pacific Watershed Associates, 2001). The consultant's field investigation reveals a sixteen-fold increase in road-related erosion and sediment delivery in Clapp Gulch in the decade of the 1990's compared to the previous decade. The consultant estimates that 96% of the road-

related erosion and sediment delivery in Clapp Gulch since 1954 occurred in the 1990's. In Railroad Gulch, 91% of the road-related erosion and sediment delivery since 1954 occurred in the 1990's. Regional Water Board staff have also been on the ground in these sub-watersheds, and have reviewed a map provided by the Discharger indicating 70 road sites where the Discharger reports that more than 12,000 cubic yards of potential long-term future sediment discharges have been prevented from entering Mainstem Elk River. Based on visual observations by staff of highly turbid waters and sediment deposits in Mainstem Elk River at the mouths of Clapp and Railroad Gulches, there appears to be significant, ongoing discharges of soil to waters of the State in these drainages.

20. Regional Water Board staff have participated in pre-harvest inspections for many of the South Fork Elk River THPs listed in the table below. During these inspections, staff observed discharges and threatened discharges of sediment and organic debris to the South Fork Elk River and its tributaries. Three of these THPs are located in the Lower South Fork Elk River planning watershed, seven THPs are located in the Upper South Fork Elk River planning watershed, and one THP (1-02-293 HUM) is located in both.

THP Number	Planning Watershed	CDF Approval Date	Harvest Acres	Evenage Harvest Acres	New Road Construction (feet)
1-00-115-HUM	Lower SFER	2/20/2003	91	91	485
1-02-293-HUM	Lower SFER	11/6/2003	24	23	0
1-02-217-HUM	Lower SFER	11/18/2003	93	90	7,300
1-03-233-HUM	Lower SFER	pending	82	80	6,450
		Subtotal	**290**	**284**	**14,235**
1-00-280-HUM	Upper SFER	12/24/2002	63	60	7,645
1-00-352-HUM	Upper SFER	12/2/2003	116	0	4,740
1-00-387-HUM	Upper SFER	12/9/2003	147	0	4,860
1-00-388-HUM	Upper SFER	3/19/2003	153	0	3,900
1-00-448-HUM	Upper SFER	12/30/2003	129	8	12,275
1-00-452-HUM	Upper SFER	9/24/2001	129	41	10,245
1-02-102-HUM	Upper SFER	10/2/2002	32	31	0
1-02-293-HUM	Upper SFER	11/6/2003	72	67	0
		Subtotal	**841**	**207**	**43,665**
		Grand Total	**1,131 acres**	**491 acres**	**57,900 feet**

Note: SFER means South Fork Elk River.

21. As indicated by the table above, approximately 1,131 acres of timber harvesting and 57,900 feet (nearly 11 miles) of new road construction have been proposed for harvest in THPs recently submitted by the Discharger and have been approved by CDF, with the possible exception of THP 1-03-233 HUM, within a three-year time frame. These THPs collectively report delivery of approximately 423 cubic yards of soil to waters of the State as a result of proposed operations. This soil volume does not include road failures, road adjustments, gullying, landsliding, or additional erosion and other sediment delivery mechanisms not

accounted for in the Water Erosion Prediction Project (WEPP) model, which the Discharger uses to estimate reported delivery volumes. These THPs also indicate a long history of intense land management activities that have resulted, and continue to result, in discharges to impaired waters of the State. Finally, the THPs propose a variety of mitigation measures intended to reduce anticipated soil delivery to receiving waters.

22. During the recent review of a number of Elk River THPs (1-02-293 HUM, 1-00-352 HUM, and 1-00-387 HUM), Regional Water Board staff brought to the Discharger's attention three specific landslides in the North and South Fork Elk River watersheds that were not disclosed in the THPs. The Discharger issued a report, dated September 17, 2003, describing the nature of these landslides, referring to them as LS 108, LS 154, and LS 191. The Discharger indicated that all three landslides shared some association with timber harvesting and related activities. LS 108 is located on a lower truck road that leads to an abandoned crossing on South Fork Elk River. Poor drainage conditions may have exacerbated movement at LS 108. The Discharger reported in September 2003 that about 450-700 cubic yards delivered to South Fork Elk River and a total of 1550 to 1800 cubic yards were deposited into the flood plain of South Fork Elk River. LS 154 is located at the transition from a Class III to a Class II watercourse, which is tributary to Elk River. It initiated on slopes that are labeled by the Discharger as a "high hazard for landsliding." Also, "intense legacy ground disturbance created during the initial harvest entry and road construction likely placed slopes underlying LS 154 in an increased hazard of failure." The Discharger estimates about 950 cubic yards of sediment mobilized and essentially delivered to the Class II watercourse from LS 154. The Discharger describes LS 191 as a likely natural, pre-existing deep-seated rock slide, whose movement was exacerbated by land management activities. Initiation of instability was reportedly first observed in 1948 and was likely the result of road alignment construction that undercut the hillslope. Over the next 50 years, at least two road alignments were constructed across the body of the landslide. The Discharger reports that an increase in hillslope activity occurred following clear-cut timber harvesting in both the 1970 and 1997 aerial photographs with a volume of approximately 700 cubic yards delivered from the slide in 2002-2003 time period. Finally, the Discharger reports future sediment deliveries of approximately 600-700 cubic yards for LS 108, 1400 cubic yards for LS 154, and greater than 1000 cubic yards for LS 191. The Discharger has proposed post-failure mitigation activities intended to stabilize exposed soil for one of these three landslides.

23. In 1998, the Discharger submitted a report titled *Sediment Source Investigation and Sediment Reduction Plan for the North Fork Elk River Watershed, Humboldt County, California* (PWA Report). The PWA Report was submitted in compliance with Cleanup and Abatement Order No. 97-115. The PWA Report states, "Landslides (exclusive of road-related slides measured during the road inventory) are the most important source of sediment in the basin, comprising an estimated 55% of the total volume of material delivered to stream channels during the period of record." The PWA Report also identifies 543 road-related sites that are most likely to deliver sediment to stream channels if erosion prevention work is not completed, recommends these sites for treatment, and states that these sites are at locations where cost-effective work can be accomplished. As such, minimization of discharges from existing landslides and prevention of discharges from new landslides (hillslope or road-related) are priorities. As noted in Finding 4, the physical setting, climate, and land use history of the North Fork and South Fork Elk River watersheds are very similar.

24. As mentioned in Finding 10 above, multiple State agencies determined that the Elk River watershed is impaired due to excessive sediment largely caused by timber harvesting and associated land-disturbing activities. The historic discharge of sediment and organic debris to Elk River and its tributaries from timber harvesting activities is well documented in the PWA Report and confirmed in THPs submitted by the Discharger.

25. The discharges described above have caused excess sediment to enter Mainstem and South Fork Elk Rivers and their tributaries. Excess fine sediment has been shown to detrimentally affect spawning gravel for fish and to reduce survival from egg to emergence stages by reducing intragravel oxygen and gravel permeability and by entombing fish fry within gravel interstices. Increased sediment and organic material can also produce tastes and odors offensive to the senses, and has increased the need for maintenance and replacement of water heaters, has plugged spray nozzles on agricultural equipment and water treatment facilities, and has interfered with surface water supply intakes, according to Elk River residents. Increased turbidity due to excessive fine sediments also provides a medium to promote bacteriological growths and reduces the effectiveness of water disinfection for domestic water supplies. Furthermore, increased bedload reduces stream pool size and habitat availability for aquatic species, and reduces channel capacity, which leads to increased flooding of adjacent lands.

26. The Discharger has discharged waste, particularly sediment, into waters of the State in violation of Basin Plan prohibitions. The Discharger has caused and permitted waste to be discharged or deposited where it is likely to be discharged into Mainstem and South Fork Elk Rivers and their tributaries. Such waste discharges have created conditions of pollution and nuisance, and will likely continue to exacerbate such conditions until the waste is cleaned up and its effects abated by the Discharger. These conditions and activities trigger the provisions of CWC sections 13304 and 13267.

27. The Discharger is required by this order, under the authority of CWC section 13304, to cleanup and abate ongoing and threatened discharges to waters of the State from past, present and proposed activities on its lands. Cleanup and abatement activities shall take place independent of, and in addition to, any arrangements the Discharger may have with other agencies to comply with other laws or to obtain credits for remediation activities under the HCP.

28. The technical reports required by this order under CWC section 13267(b) are necessary to ensure that sources of management-related sediment discharges are identified, characterized and evaluated for treatability. The burden to the Discharger, including the costs of these reports, bears a reasonable relationship to the need and benefits to be obtained, because the reports will lead directly to the abatement and prevention of controllable discharges to impaired waters of the State. These discharges cause, and threaten to cause, significant environmental and economic harm to the beneficial uses of waters of the State and add to nuisance flooding conditions.

29. This is an enforcement action by a regulatory agency, being taken for the protection of the environment, and is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, section 21000 et seq., specifically section 21084), and in accordance with California Code of Regulations, Title 14, section 15321.

THEREFORE, IT IS HEREBY ORDERED that pursuant to CWC sections 13267(b) and 13304, the Discharger shall comply with the following provisions: (Note: the headings below, **in bold type**, are provided solely for the convenience of reference, and are not a part of this Order and shall have no effect on its interpretation.)

1. **Submit Existing Clapp and Railroad Gulch Information** – The Discharger shall submit by May 5, 2004 all documentation, including, at a minimum, hard copies of all field notes and forms; both hard copy and electronic versions of databases and any associated GIS layers or access to electronic databases and any associated GIS layers for queries by Regional Water Board staff; both hard copy and electronic versions of all air photographs and images; and both hard copies and electronic versions of all monitoring data associated with the investigation, assessment, characterization, and treatment (abatement) of sediment sources on the Discharger's ownership in the Clapp and Railroad Gulch drainage areas. In general, these drainage areas are defined as being from the highest points of topography (which act as hydraulic divides to adjacent areas) to the points at which Clapp and Railroad Gulches discharge into Mainstem Elk River. The provided information shall also include, at a minimum, complete descriptions of: the extent of areas inventoried, aerial photographs (dates and flight lines) evaluated, the extent of field surveys, all methods employed in the investigation, assessment, and characterization of sediment sources, and any associated documentation and analyses.

2. **Initial Cleanup Activities** – Prior to the completion of the sediment source inventory and sediment reduction plan required in Item 3 below, the Discharger shall immediately treat (abate) controllable, management-related sediment sources previously inventoried by the Discharger on its ownership in the South Fork and Mainstem Elk River watersheds, according to the following provisions:

   a) **Submit Initial Workplan and Treatment Schedule** - The Discharger shall submit by May 5, 2004, an initial workplan and treatment schedule to remedy previously inventoried sediment sources, subject to approval by the Regional Water Board Executive Officer. The workplan shall contain a detailed list of all known sediment source sites associated with watercourse crossings, roads, skid trails, gullies, road-related and non-road-related landslides, and any other sediment-generating features associated with timber harvest activities. A subset of these sites shall be identified as "early priority" sites that are feasible to treat prior to the 2004-2005 winter period. For each sediment source site, the list shall include, at a minimum, a treatment site identification number and location shown on a scaled map, the volume of sediment to be treated, treatment immediacy and the selected treatment alternative. The treatment schedule shall accompany the workplan, and shall contain a detailed time schedule for treatment activities to be completed prior to the 2004-2005 winter period at all "early priority" sites listed in the workplan. The treatment schedule shall accelerate to the maximum extent feasible the rate of corrective actions already occurring each year under the Discharger's HCP.

   b) **Implement Initial Workplan and Treatment Schedule** - The Discharger shall commence implementation by June 5, 2004 or within 14 days of approval by the

Executive Officer, whichever is sooner, of the initial workplan and treatment schedule described in Item 2(a) above. During treatment, the Discharger shall allow Regional Water Board staff reasonable access for routine inspection purposes to areas where control, treatment, and mitigation activities are occurring.

c) **Submit Initial Summary Report and Monitoring Plan** - The Discharger shall submit a summary report, monitoring plan and associated documentation by October 15, 2004, for all treatment work conducted under this order in 2004, subject to approval by the Regional Water Board Executive Officer. The report shall correspond to and be fully compatible with the initial workplan and treatment schedule described in Item 2(a) above, and shall discuss in detail the reasons for any departures from the workplan and treatment schedule. The summary report submittal shall include, at a minimum, a hard copy summary report describing all corrective actions completed, hard copies of all field notes and forms, and both hard copies and electronic versions of databases and any associated GIS layers or access to electronic databases and any associated GIS layers for queries by Regional Water Board staff. The report shall also include a winter period monitoring plan describing monitoring activities to be conducted for the 2004-2005 winter period. The monitoring plan shall be consistent with the requirements specified in Item 5 below, and shall contain an itemized list of selected monitoring locations, the types of monitoring to be conducted at each location, and a detailed sampling schedule. The monitoring plan shall also include references to all quality assurance documents (i.e., Quality Assurance Project Plans and Standard Operating Procedures) associated with the activities to be conducted.

3. **Prepare and Submit Sediment Source Inventory and Sediment Reduction Plan & Master Treatment Schedule -** The Discharger shall prepare and submit, by December 1, 2004, a sediment source inventory and sediment reduction plan, as well as a master treatment schedule for the Discharger's ownership in the South Fork and Mainstem Elk River watersheds, according to the following provisions and subject to approval by the Regional Water Board Executive Officer. The submittals required by this section shall disclose and address current conditions in these watersheds existing as of May 1, 2004.

   a) **Prepare and Submit Sediment Source Inventory and Sediment Reduction Plan** - The sediment source inventory and sediment reduction plan shall be formatted such that it is fully compatible with the *Sediment Source Investigation and Sediment Reduction Plan for the North Fork Elk River Watershed, Humboldt County, California* ([PWA Report], July 1998), and shall additionally contain the following information:

      i) All documentation associated with the investigation, assessment and characterization of sediment sources, including, at a minimum, hard copies of all field notes and forms; both hard copy and electronic versions of databases and any associated GIS layers or access to electronic databases and any associated GIS layers for queries by Regional Water Board staff; and both hard copy and electronic versions of all air photographs and images.

      ii) Complete descriptions of: the extent of areas inventoried, aerial photographs (dates and flight lines) evaluated, the extent of field surveys, all methods employed in the investigation, assessment, and characterization of sediment sources, and any associated documentation and analyses.

iii) A detailed list of known sediment source sites that are feasible to treat associated with watercourse crossings, roads, skid trails, gullies, road-related and non-road-related landslides, and any other sediment-generating features associated with timber harvest activities. For each sediment source site, the list shall include, at a minimum, a treatment site identification number and location shown on a scaled map, the volume of sediment to be treated, treatment immediacy and the selected treatment alternative.

b) Prepare and Submit Master Treatment Schedule - The master treatment schedule shall accompany the sediment source inventory and sediment reduction plan, and shall contain a detailed, long-term, multi-year time schedule for treatment activities to be completed at all sites listed in the inventory and reduction plan. The master treatment schedule shall accelerate to the maximum extent feasible the rate of corrective actions already occurring each year under the Discharger's HCP. Implementation of the sediment reduction plan and master treatment schedule, according to the provisions of Item 4 below, will lead to the eventual remediation of all significant, known and feasibly treatable management-related sediment source sites on the Discharger's ownership in the South Fork and Mainstem Elk River watersheds.

4. **Ongoing (Annual) Cleanup Activities** – Treatment implementation at all sediment source sites identified in the sediment source inventory and sediment reduction plan described in Item 3 above shall continue on an annual basis until all sites have been treated, according to the following provisions:

a) Submit Annual Workplans and Treatment Schedules – The Discharger shall submit by April 1 of each year, an annual workplan and treatment schedule to remedy sediment sources identified in the sediment source inventory and sediment reduction plan described in Item 3 above, subject to approval by the Regional Water Board Executive Officer. The workplan shall contain a detailed list of known, priority sediment source sites that are feasible to treat prior to the following winter period associated with watercourse crossings, roads, skid trails, gullies, road-related and non-road-related landslides, and any other sediment-generating features associated with timber harvest activities. For each sediment source site, the list shall include, at a minimum, a treatment site identification number and location shown on a scaled map, the volume of sediment to be treated, treatment immediacy and the selected treatment alternative. The treatment schedule shall accompany the workplan, and shall contain a detailed time schedule for treatment activities to be completed prior to the following winter period at all sites listed in the workplan.

b) Implement Annual Workplans and Treatment Schedules – The Discharger shall commence implementation by May 1 of each year, or within 14 days of approval by the Executive Officer, whichever is sooner, of the annual workplan and treatment schedule described in Item 4(a) above. During treatment, the Discharger shall allow Regional Water Board staff reasonable access for routine inspection purposes to areas where control, treatment, and mitigation activities are occurring.

c) Submit Annual Summary Reports and Monitoring Plans - The Discharger shall submit a summary report, monitoring plan and associated documentation by October 15

of each year, for all treatment work conducted under this order during the current year, subject to approval by the Regional Water Board Executive Officer. The report shall correspond to and be fully compatible with the approved annual workplan and treatment schedule described in Item 4(a) above, and shall discuss in detail the reasons for any departures from the workplan and treatment schedule, and how such departures will be resolved in future years. The summary report submittal shall include, at a minimum, a hard copy summary report describing all corrective actions completed, hard copies of all field notes and forms, and both hard copies and electronic versions of databases and any associated GIS layers or access to electronic databases and any associated GIS layers for queries by Regional Water Board staff. The report shall also include a winter period monitoring plan describing monitoring activities to be conducted for the current year's winter period. The monitoring plan shall be consistent with the requirements specified in Item 5 below, and shall contain an itemized list of selected monitoring locations, the types of monitoring to be conducted at each location, and a detailed sampling schedule. The monitoring plan shall also include references to all quality assurance documents (i.e., Quality Assurance Project Plans and Standard Operating Procedures) associated with the activities to be conducted.

5. **Monitoring and Reporting Activities** - The Discharger shall conduct winter period monitoring activities on a representative sample of sediment source sites treated under Items 2 and 4 above to demonstrate the effectiveness of implemented treatment methods at protecting receiving waters from sediment discharges. Recognizing that different types of sites are suitable for different types of monitoring, the Discharger may identify several categories of treated sites (e.g., watercourse crossings, roads, skid trails, gullies, road-related and non-road-related landslides, etc.) and assign different types of monitoring to those sites based on the unique nature of each category. Types of monitoring shall include, at a minimum, visual observations, photographic documentation, and instream grab sampling for turbidity. The Discharger shall select sampling locations such that monitoring is conducted at a representative sample of treated sites across the categories identified, and across a range of physical, site-specific attributes (e.g., underlying geology, soil type, slope angle, drainage area, etc.) All selected monitoring locations shall be subject to observational monitoring, while smaller subsets shall also be subject to photographic monitoring and/or instream grab sampling for turbidity. For example, treated road sites may receive observational and photographic monitoring while treated watercourse crossings may receive observational, photographic, and grab sample monitoring. The Discharger shall develop and submit by October 15, 2004, a Quality Assurance Project Plan (QAPP) and Standard Operating Procedures (SOPs) for all monitoring and reporting required by this order, subject to approval by the Regional Water Board Executive Officer. Collectively, these documents will provide detailed information regarding all aspects of monitoring and reporting, including, but not limited to: selection criteria for monitoring locations, sampling methods, sampling frequencies, data analysis methods, measures for quality assurance and quality control, monitoring report formats and frequency of reporting. The QAPP and SOPs shall be developed in a manner consistent with guidance available from the US Environmental Protection Agency (EPA),[1] and may follow the format of similar documents that the Discharger currently uses under existing Waste Discharge Requirements (Order No. R1-

[1] EPA guidance is available on the internet at: http://www.epa.gov/quality/

2003-0118) for the North Fork Elk River Watershed. The Discharger shall implement monitoring and reporting activities according to the approved QAPP and SOPs.

6. **Monthly Status Reports** – For each month between April and August (inclusive), the Discharger shall submit to the Regional Water Board by the fifteenth day of the following month a brief status report for all treatment work conducted under this order. Each status report shall be compatible with the approved workplan and treatment schedule for the current year, and shall discuss in detail the reasons for any departures from the workplan and treatment schedule, and how such departures will be resolved in future months.

7. **Work Conducted by Licensed Professionals -** The practice of geology is identified and regulated under Chapter 12.5 (Geologists and Geophysicists Act) of the Business and Professions (B&P) Code, including Rules and Regulations (CCR Title 16, Division 29) and any related sections of the B&P Code, Government Code, Penal Code, and/or Evidence Code. The practice of engineering in California is identified and regulated under Chapter 7 (Professional Engineers Act) of the B&P Code, including rules and regulations (CCR Title 16, Division 5) and any related sections of the B&P Code, Government Code, Penal Code, and/or Evidence Code. We expect the Discharger to fully comply will all aspects of existing statutes and regulations regarding the practice of geology and/or engineering associated with the contents and deliverables identified in this order.

Ordered by _____

Catherine Kuhlman
Executive Officer

April 2, 2004